

WHAT IS CLAIMED IS:

1 1. A sternal closure device comprising impermanently joined sliding and receiving
2 attachment structures which are adapted for intercostal positioning between at least two
3 correspondingly positioned rib pairs substantially surrounding a patient's sternum each structure
4 having a cross member, a plurality of integrated leg and angled foot portions, and a plurality of
5 sternum engagement surfaces, and an end portion.

1 . The device of claim 1 wherein said receiving structure further comprises a
2 resiliently tensioned locking member with angularly disposed teeth like structures outwardly
3 positioned at first and second ends of said locking member and a securing aperture substantially
4 centered there between.

1 3. The device of claim 1 wherein said sliding structure further comprises a plurality
2 of projection members with angularly disposed teeth like structures inwardly positioned on each
3 innermost surface of each projection member.

1 4. The device of claim 1 wherein said sternum engagement surfaces contacts the
2 frontal portion of a sternum.

1 5. The device of claim 1 wherein said sternum engagement surfaces contacts the
2 posterior portion of a sternum.

1 6. The device of claim 1 wherein said sternum engagement surfaces contact the
2 frontal and posterior portions of a sternum.

1 7. The device of claim 1 wherein the receiving attachment structure further comprises a
2 securing means to facilitate the operative securing of said structures to one another.

1 8. The surgical device of claim 1 wherein said clamp members are made from
2 biocompatible material.

1 9. The surgical device of claim 8 wherein said material comprises a radiolucent
2 biocompatible material.

1 10. The sternal closure device of claim 1 wherein said first and second attachment structures
2 are sized and dimensioned to engage opposite sides of a patient's severed sternum and facilitate
3 the tilting of divided sternal plates while positioned intercostally between at least two
4 corresponding rib pairs.

1 11. The sternal closure device of claim 1 wherein said device further comprises a screw type
2 fastening means to removably attach said sliding and receiving attachment structures.

12. A method of closing a patient's sternum following a sternotomy comprising:

positioning sliding and receiving attachment structures about a respective sternal half and between at least two correspondingly positioned rib pairs;

aligning opposed positioned sliding and receiving attachment structures for subsequent insertion of sliding structure projection members into receiving chambers of said receiving attachment structure;

positioning foot members of attachment and receiving structures upon the posterior section of said sternum in a manner to angle upwardly divided sternal halves and to maximize sternal healing surface contact; and,

removably positioning and securing teeth like structures on each end of a locking member to abut complimenting teeth located on a plurality of projection members where said projection members are within said receiving chambers.

13. The device of claim 1 wherein said device may be intercostally positioned absent necessity for any secondary transfixion application or structure.

14. The device of claim 2 wherein said resiliently tensioned locking member may be compressed to facilitate immediate device disengagement when previously secured intercostally between at least two corresponding positioned rib pairs.

15. The device of claim 7 wherein said securing means may be removed to facilitate immediate device disengagement when previously secured intercostally between at least two corresponding positioned rib pairs.

1 16. The device of claim 1 further comprising a laser scoring of at least one portion of
2 said device to allow severing thereof to facilitate immediate device disengagement when
3 previously secured intercostally between at least two corresponding positioned rib pairs.

1 17. A sternal closure device comprising impermanently joined sliding and receiving
2 attachment structures which are adapted for intercostal positioning between at least two
3 correspondingly positioned rib pairs substantially surrounding a patient's sternum each structure
4 having a cross member, a plurality of integrated leg and angled foot portions, and a plurality of
5 sternum engagement surfaces, and an end portion, wherein said device may be intercostally
6 positioned absent necessity for any secondary transfixion application or structure.

1 18. The device of claim 17 wherein said resiliently tensioned locking member may be
2 compressed to facilitate immediate device disengagement when previously secured intercostally
3 between at least two corresponding positioned rib pairs.

1 19. A sternal closure device comprising impermanently joined sliding and receiving
2 attachment structures which are adapted for intercostal positioning between at least two
3 correspondingly positioned rib pairs substantially surrounding a patient's sternum each structure
4 having a cross member, a plurality of integrated leg and angled foot portions, and a plurality of
5 sternum engagement surfaces, and an end portion, the device further comprising a laser scoring
6 of at least one portion of said device to allow severing thereof to facilitate immediate device
7 disengagement when previously secured intercostally between at least two corresponding
8 positioned rib pairs.